

# PATENT SPECIFICATION

DRAWINGS ATTACHED

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## COMPLETE SPECIFICATION

### Improvements in or relating to Cooking Apparatus

We, J. LYONS & COMPANY LIMITED, a British Company, of Cadby Hall, London, W.14, and BENHAM & SONS LIMITED, a British Company, of 66, Wigmore Street, London, W.1, do hereby declare the invention, for which we pray that a patent may be granted to us and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention is concerned with improvements in or relating to cooking apparatus and more particularly roasting spits.

According to one feature of the present invention there is provided a cooking spit in which a spit bar is carried by pulleys mounted upon rails extending between a cooking position and a non-cooking position in which the spit bar is accessible to an operator for loading and unloading, basting and like operations.

According to another feature of the present invention there is provided a cooking spit comprising a pair of rails, a spit bar carried between channelled pulleys mounted on the rails, and drive means, the spit bar being movable along the rails from a first position to a cooking position in which means extending from a pulley engage the drive means for rotation of the spit bar.

According to a further feature of the present invention there is provided a cooking spit comprising a pair of rails upon which is mounted a spit bar having pulleys engaging the rails, each channelled pulley being coupled to a roller, the spit bar being movable along the rails from a first position to a cooking position in which a spit bar roller engages with a main drive roller having a fixed axis, that spit bar roller and the main drive roller being knurled.

In order that the present invention may be well understood there will now be described one embodiment thereof, given by way

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of example only, reference being had to the drawing accompanying the provisional specification in which:—

Figure 1 is a schematic front elevation,

Figure 2 is a section on the line II—II of Figure 1, and

Figure 3 is a side elevation, with a part removed to show the arrangement of the drive.

The roasting spit comprises a unit having side plates 1, 2 and back plate 3. Between the side plates extend partitions which define flues for carrying away gas fumes from an upper set of heaters 4 and a lower set of heaters 5, and cooking fumes and odours from around an upper spit 6 and a lower spit 7. For driving the spits there is a motor 8 and a drive which will be described later.

Each set of heaters is directed downwardly towards its adjacent spit and preferably each set of heaters comprises two rows of gas heater elements positioned so that they are directed towards the spit axis. Above each set of heaters is a layer of suitable heat insulating material 9. The partitions are so arranged that they form a main cooking fume flue having entry ducts 10a and 10b, and a main gas fume flue 12 having an entry duct 13 extending along the upper set of heaters and side entry ducts coupling the main gas fume flue with a transverse gas fume flue 14 extending along the lower set of burners. To obtain satisfactory air circulation around the heaters there may be provided upper and lower front cover plates 15, 16 and spaced therefrom upper and lower baffle plates 17, 18. Furthermore it is at present preferred to provide in the main cooking fume flue upper and lower baffles 19, 20 as shown at the entry ducts 10a and 10b.

Mounted in inner side plates 21, 22 are pairs of rollers, at one end the roller being knurled, these being indicated by the numerals

23, 24 and 25, 26 and at the other end the rollers may be plain surfaced, only the front plain rollers are shown at 27, and 28. The upper spit 6 has fast upon one end a pinion 31 which has secured thereto or integral therewith a channelled pulley 32, whilst at its other end the upper spit, which is of rectangular cross section, is received in a wheel 33, which may be plain faced, which has secured to it or integral therewith a channelled pulley 34. In the operative position of the upper spit the pinion 31 rests upon the knurled rollers 23, 24 and the wheel 33 upon the corresponding plain rollers. Likewise the lower spit 7 has fast upon it at one end a pinion 31a and channelled pulley 32a and its other end is received in a wheel 33a and channelled pulley 34a.

The motor 8 which is preferably a variable speed reduction unit and electric motor is mounted upon a hinged base 35 and drives a pinion 36 around which extends a chain 37 that chain engaging pinions 123, 124 and 125, 126 coaxial and fast with respect to the rollers 23, 24 and 25, 26. Thus drive is transmitted through chain 37 to the knurled pulleys and thence to the spits. The hinging of the motor base serves to tension the chain.

At each end of each spit are shield plates 37, 38 each having a recess 39 and extending forwardly at the lower edge of each recess. In the extended part is a cut away 40. The channelled pulleys 32, 34 receive the edges of the shield plates at the recesses. The lower edges of the recesses in the shield plates form rails along which the spits may be moved from the operative position shown to an inoperative position in which the channelled pulleys lie in the cut away parts 40. Drip trays 41 are preferably provided so as to lie beneath the spits when in the inoperative position and to receive any fat which may fall on and drain off the surfaces 42. With a unit according to the invention the heat is directed downwardly and on to the spits, thereby reducing heat loss by forward radiation and enhancing the comfort of the operator, fumes and odours are removed by the through passage of air and loading and unloading is simplified. To load a spit the plain wheel is removed, the birds or other food to be cooked are placed on the spit, the bird nearest the knurled wheel being engaged by a fixed skewer 43, a clamping skewer 44 is passed on to the spit, the wheel is replaced, the spit is held in the inoperative position for seasoning and greasing before cooking, the spit is rolled down the recesses in the shield plates on to the knurled and plain rollers—when drive is at once taken up. The removable skewer may if desired be provided with a set screw 45 for locking it at any desired point along the spit. The spits are easily moved to the inoperative position above the drip trays which are clear of the burners.

If desired a flame trap and/or a filter may be provided in the cooking fume flue and any extractor arrangement may also be provided to increase draft in that flue.

The speed of rotation of the spits can be varied to suit the food being cooked, it being found that a certain minimum speed renders basting unnecessary, and a timer may be provided for automatically extinguishing the heaters on completion of a cooking cycle.

It will be appreciated that various modifications may be made to the unit described and illustrated, for example it being possible to vary the number of spits in a unit.

#### WHAT WE CLAIM IS:—

1. A cooking spit in which a spit bar is carried by pulleys mounted upon rails extending between a cooking position and a non-cooking position in which the spit bar is accessible to an operator for loading and unloading, basting and like operations.
2. A cooking spit comprising a pair of rails, a spit bar carried between channelled pulleys mounted on the rails, and drive means, the spit bar being movable along the rails from a first position to a cooking position in which means extending from a pulley engage the drive means for rotation of the spit bar.
3. A cooking spit comprising a pair of rails upon which is mounted a spit bar having pulleys engaging the rails, each channelled pulley being coupled to a roller, the spit bar being movable along the rails from a first position to a cooking position in which a spit bar roller engages with a main drive roller having a fixed axis, that spit bar roller and the main drive roller being knurled.
4. A cooking spit according to Claim 3 in which each spit bar roller engages a pair of main rollers, one pair of main rollers being drive rollers each of which is knurled and engages a knurled spit bar roller.
5. A cooking spit according to Claim 4 in which each main drive roller is coupled to a sprocket, a chain passing about the sprockets and a drive sprocket.
6. A cooking spit according to Claim 5 in which a hingedly mounted electric motor is coupled to the sprocket, the weight of the motor serving to tension the chain.
7. A cooking spit according to any of the preceding claims in which each rail is formed by the edge of a plate.
8. A cooking spit according to Claim 7 in which each plate edge includes a recess which receives the pulley engaging that rail at the first position of the spit bar.
9. A cooking spit according to any of the preceding claims in which one pulley is removable from the spit bar.
10. A cooking spit according to any of the preceding claims in which one pulley has secured thereto a skewer.
11. A cooking spit according to any of the

preceding claims in which a skewer is adjustably located on the spit bar.

12. A cooking spit according to any of the preceding claims in which a drip tray is located so as to lie beneath the spit bar in the first position.

13. A cooking spit according to Claim 12 in which a draining surface is provided beneath the spit bar in the cooking position, the drip tray being located to receive material draining from the draining surface.

14. A cooking spit according to any of the preceding claims including one or more heaters located above and directed on to the spit bar when in the cooking position.

15. A cooking spit according to Claim 14 in which the heaters comprise gas burners.

16. A cooking spit according to Claim 15 including a gas flue, the entry of which is adjacent the gas burners.

17. A cooking spit according to Claim 16 including a pair of spaced plates in front of the gas burners, the inner plate comprising a

baffle plate adapted to assist, in operation, in providing an air draught to the burners.

18. A cooking spit according to any of Claims 14 to 17 including a cooking fume flue having an entry adjacent the spit in the cooking position.

19. A cooking spit according to any of the preceding claims in which two spit bars are provided on different levels, gas burners being located above each spit and a gas fume flue being provided having entries adjacent each set of burners and a cooking fume flue having entries adjacent each spit in the cooking position.

20. A cooking spit substantially as described with reference to the drawings accompanying the provisional specification.

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### PROVISIONAL SPECIFICATION

#### Improvements in or relating to Cooking Apparatus

We, J. LYONS & COMPANY LIMITED, a British Company, of Cadby Hall, London, W.14, and BENHAM & SONS LIMITED, a British Company, of 66, Wigmore Street, London, W.1, England, do hereby declare this invention to be described in the following statement:—

This invention is concerned with improvements in or relating to cooking apparatus and more particularly roasting spits.

Features and advantages of the present invention will appear from the following description of one embodiment of roasting spit, given by way of example only, reference being had to the accompanying drawing in which:—

Figure 1 is a schematic front elevation,

Figure 2 is a section on the line II—II of Figure 1, and

Figure 3 is a side elevation with a part removed to show the arrangement of the drive.

The roasting spit comprises a unit having side plates 1, 2 and back plate 3. Between the side plates extend partitions which define flues for carrying away gas fumes from an upper set of heaters 4 and a lower set of heaters 5, and cooking fumes and odours from around an upper spit 6 and a lower spit 7. For driving the spits there is a motor 8 and a drive which will be described later.

Each set of heaters is directed downwardly towards its adjacent spit and preferably each set of heaters comprises two rows of gas heater elements positioned so that they are directed towards the spit axis. Above each set of heaters is a layer of suitable heat insulating material 9. The partitions are so arranged that they form a main cooking fume

flue 10 having entry ducts 10a and 10b, and a main gas fume flue 12 having an entry duct 13 extending along the upper set of heaters and side entry ducts coupling the main gas fume flue with a transverse gas fume flue 14 extending along the lower set of burners.

To obtain satisfactory air circulation around the heaters there may be provided upper and lower front cover plates 15, 16 and spaced therefrom upper and lower baffle plates 17, 18. Furthermore it is at present preferred to provide in the main cooking fume flue upper and lower baffles 19, 20 as shown at the entry ducts 10a and 11a.

Mounted in inner side plates 21, 22 are pairs of pulleys, at one end the pulleys being knurled, these being indicated by the numerals 23, 24 and 25, 26 and at the other end the pulleys may be plane surfaced, only the front plane pulleys are shown at 27, and 28. The upper spit 6 has fast upon one end a pinion 31 which has secured thereto or integral therewith a channelled pulley 32, whilst at its other end the upper spit, which is of rectangular cross section, is received in a wheel 33, which may be plain faced, which has secured to it or integral therewith a channelled pulley 34. In the operative position of the upper spit the pinion 31 rests upon the knurled pulleys 23, 24 and the wheel 33 up on the corresponding plane rollers. Likewise the lower spit 7 has fast upon it at one end a pinion 31a and channelled pulley 32a and its other end is received in a wheel 33a and channelled pulley 34a.

The motor 8 which is preferably a variable speed reduction unit and electric motor is

mounted upon a hinged base 35 and drives a pinion 36 around which extends a chain 37 that chain engaging pinions 123, 124 and 125, 126 coaxial and fast with respect to the pulleys 23, 24 and 25, 26. Thus drive is transmitted through chain 37 to the knurled pulleys and thence to the spits. The hinging of the motor base serves to tension the chain.

At each end of each spit are shield plates 37, 38 each having a recess 39 and extending forwardly at the lower edge of each recess. In the extended part is a cut away 40. Channelled pulleys receive the edges of the shield plates at the recesses. The lower edges of the recesses in the shield plates form rails along which the spits may be moved from the operative position shown to an inoperative position in which the channelled pulleys lie in the cut away parts 40. Drip trays 41 are preferably provided so as to lie beneath the spits when in the inoperative position and to receive any fat which may fall on and drain off the surfaces 42. With a unit according to the invention the heat is directed downwardly and on to the spits, thereby reducing heat loss by forward radiation and enhancing the comfort of the operator fumes and odours are removed by the through passage of air and loading and unloading is simplified. To load a spit the plane wheel is removed, the birds or other food to be cooked are placed on the spit, the bird nearest the knurled wheel being

engaged by a fixed skewer 43, a clamping skewer 44 is passed on to the spit, the wheel is replaced, the spit is held in the inoperative position for seasoning and greasing before cooking, and the spit is rolled down the recesses in the shield plates on to the knurled pulleys and rollers—when drive is at once taken up. The removable skewer may if desired be provided with a set screw 45 for locking it at any desired point along the spit. The spits are easily moved to the inoperative position above the drip trays which are clear of the burners.

If desired a flame trap and/or a filter may be provided in the cooking fume flue and any extractor arrangement may also be provided to increase draft in that flue.

The speed of rotation of the spits can be varied to suit the food being cooked, it being found that a certain minimum speed renders basting unnecessary, and a timer may be provided for automatically extinguishing the heaters on completion of a cooking cycle.

It will be appreciated that various modifications may be made to the unit described and illustrated, for example it being possible to vary the number of spits in a unit.

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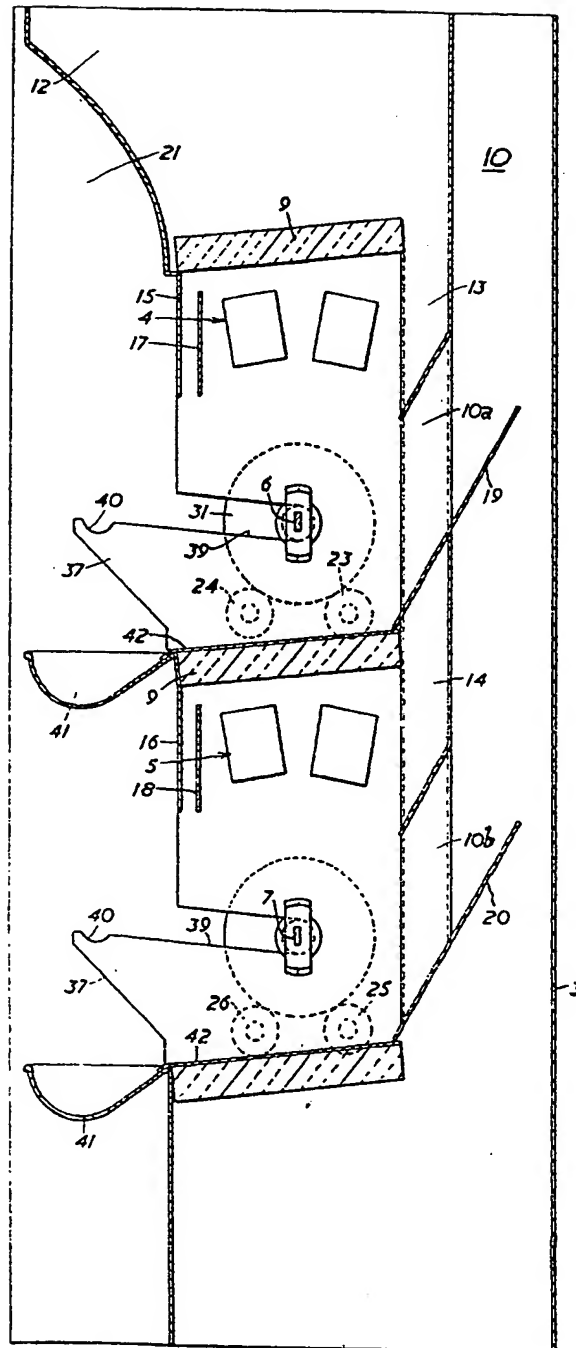
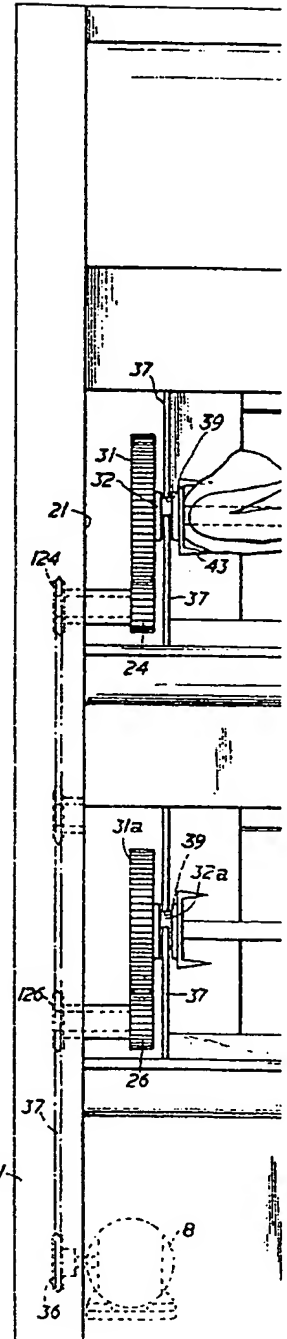


FIG. 2



SHEET 1



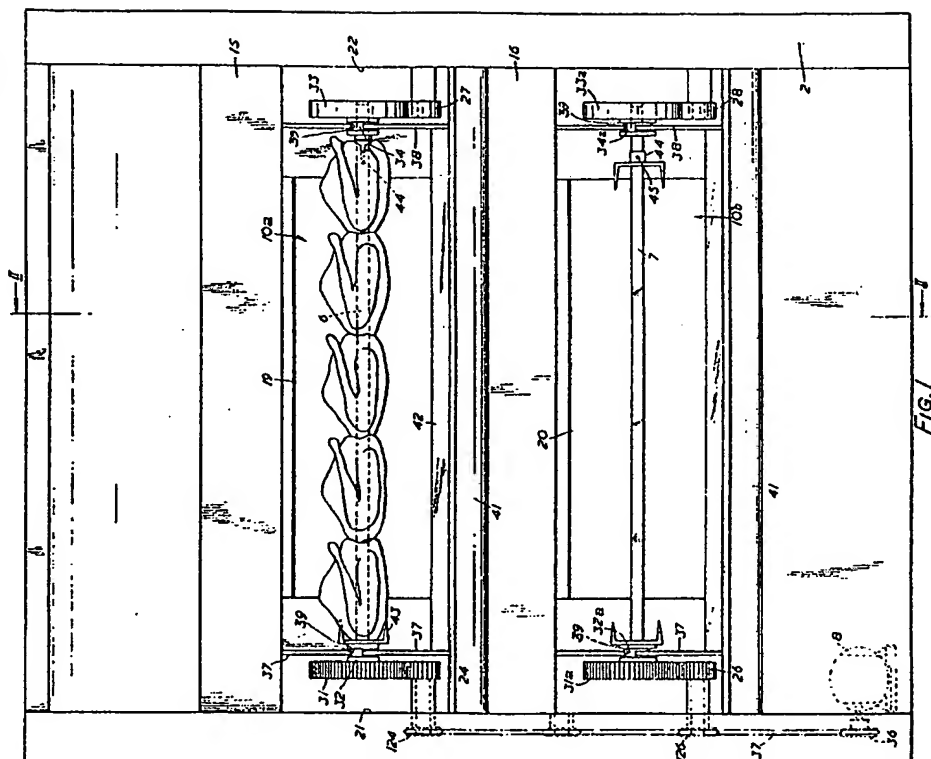


FIG. 1

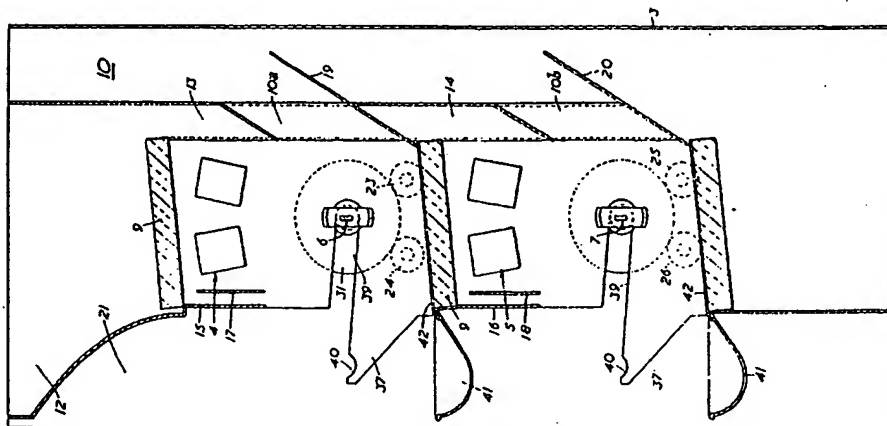


FIG. 2

FIG. 3

